REMARKS

In the Office Action, the Examiner required drawing amendments, objected to claims 6 and 23 as informal, required amendment of claims 24 and 25, rejected claims 1 – 3, 6 – 8, 10 – 13 and 15 – 25 as anticipated by the Tepmongkol reference, rejected claim 8 as obvious over Tepmongkol, and indicted that claim 14 would be allowed if redrafted to in independent form.

Drawing Objections

Formal drawings to overcome the objection are enclosed. In particular, formal drawing Figures 1 – 23 on ten sheets of drawings are enclosed.

Informal Claims

The claims indicated as informal by the Examiner have been amended to overcome the informalities, and the changes suggested by the Examiner have been entered.

35 USC 102(e)

The reference of **Tepmongkol** discloses the scaling of dot matrix data from a 300 dpi format to a 600 dpi format. The reference teaches recognition of patterns in a dot matrix data set by mapping to a 3x3 window matrix and applying an exclusive OR function. A determination is made as to whether a graphical image or artwork is present, or whether the data is a so-called logical frequency domain pattern, which is text and numbers. If the data is text and numbers, the smoothing method is applied.

A primary concern of the reference is to determine if the data is text or graphics and to apply the smoothing and expansion only to the text, whereas the straight scaling is applied to the graphics without smoothing. The reference discloses how to scale by a factor of 2 to get from 300 dpi to 600 dpi, but does not address other scaling factors and certainly does not address fractional scaling.

The present invention provides a method for scaling and smoothing which permits scaling at various factors and especially scaling at non-whole numbers. The method disclosed in the present application presents the general case of scaling and smoothing from any first resolution to any second resolution without regard to the resolutions being particular values or being whole numbers of one another. The present method therefore provides considerable utility over the disclosure of the cited reference, which is limited to a special

case of converting from 300 dpi to 600 dpi. The present inventors have therefore discovered, and have disclosed in this application, the general case of smoothing and scaling. This general case was not recognized by Tepmongkol and is not suggested in the reference. Thus, the present invention represents a patentably distinct step forward from the prior art, and so is a non-obvious improvement thereover. See claims 1, 3, 24 and 25 in this regard.

As stated in the specification at page 31, lines 1 – 3, the scaling and smoothing can be carried out without being fixed in advance as to the resolution of the printer that is being used. This provides an enormous advantage over the teachings of Tepmongkol. The scaling can include fractional scaling. See claims 8 and 18, for example.

In addition, the present inventor has provided an improvement over the non-whole number scaling case by reducing the conversion to a look up table wherein the look up table is of a reduced size to permit calculation of the scaling function using a cache of a processor for faster calculations, rather than using a larger look up table that would require the slower external memory to process. This improvement is not shown in the reference and is in no way suggested or even hinted at in the Tepmongkol reference. See claim 11 in this regard.

As a further improvement over the Tepmongkol reference, the present invention may be used on gray scale graphic images. Tepmongkol teaches that no smoothing is to be performed on graphic images, and tests the data to provide the smoothing only to text and numbers. The reference as such does not disclose this aspect of the invention and, further, does not obviate the invention since it teaches away from applying smoothing to graphics as in the present invention. See claim 20.

In addition to the use of the present scaling and smoothing method for grayscale images, the present method may also be used for color images, a feature not shown or suggested in the reference. See claims 21 and 22.

As such, the present invention differs in very many aspects from the description of the Tepmongkol reference. The invention is thus not only not anticipated by the art but is also non-obvious and therefore patentable thereover.

Thus, the invention as defined in the claims is not anticipated by the cited references and as such withdrawal of the rejection is respectfully requested.

Allowable Claim

Applicant notes with appreciation the indication of allowable subject matter in claim 14.

Conclusion

The claims of the present application are presented above for reconsideration. Applicant respectfully requests favorable reconsideration and early allowance of the present application.

Respectfully submitted,

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CH1\4147891.1